

REMARKS

In response to the Office Action mailed on December 9, 2004, Applicant files this reply. To further the prosecution of this Application, Applicant submits the following new claims as well as the following remarks discussing patentability of pending claims.

In this reply, Applicant adds claims 77-82. Note that no new matter has been added as a result of amending or adding these claims to the application. Claims 2-4 and 20-22 are being cancelled by way of this reply.

If the Examiner believes, after reviewing this Response, that the pending claims are not in condition for allowance, the Examiner is respectfully requested to call the Applicant(s) Representative at the number below for an interview.

Objection to Claim 31

The Office Action includes an objection to claim 31. Applicant has modified claim 31 to depend from claim 27 to cure the issue regarding lack of definiteness.

Objections to Claim 1 and 19

The Office Action includes an objection to claim 1 and 19 for lack of definiteness. Applicant has modified claims 1 and 19 to cure the issue raised by the Examiner.

Patentability of Claims 1 and 19 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 1. Applicants respectfully traverse the rejection because claim 1 includes limitations not found in any of the cited references.

For example, claim 1 recites a process of selecting a set of rules and further limiting execution of the selected set of rules during the execution process depending on an execution of a disregard instruction in the executed set of selected rules. That is, claim 1 recites “selecting, based on the access request, a set of rules containing at least one rule from a master set of rules” as well as “producing an access control decision based on performing rule operations in a given rule of the selected set of rules by sequentially performing rule operations in the given rule until performing a disregard instruction, the disregard instruction including disregard criteria identifying a type of other rule operations in the selected set of rules to disregard from performing.” Further, claim 1 recites

“after performing the disregard instruction in the given rule: i) evaluating the disregard criteria against any remaining unperformed rule operations in other rules of the selected set of rules, the other rules being rules other than the given rule.”

Applicant submits that claim 1 is novel and includes limitations not taught or suggested by the cited art. First, the claimed invention includes executing a disregard instruction which itself includes disregard criteria identifying a type of rules in the selected set of rules that shall be disregarded from performing. For example, as in claim 1, the disregard rule includes disregard criteria to disregard performing certain types of rule operations in the selected set of rules. Thus, performance of a disregard instruction in one rule of the selected set of rules affects future performance of specifically identified other rules in a selected set of rules. The instruction of the “given rule” is performed before further limiting execution of other rules at run-time when the rules are being applied to make a determination of whether to allow or deny the access request. This is not shown in the cited reference.

As mentioned, the cited references disclose a method of selecting a set of rules and determining whether that rules shall be applied or not applied. There is

no mention of executing or performing a rule in the selected set of rules and, based on executing one of the rules, utilizing disregard criteria in a performed rule to identify which other specific rule operations in the selected set of rules to disregard. That is, Calvignac more specifically discloses a two-stage selection process. A first selection stage involves picking ranges that do not intersect or overlap. The second selection stage involves comparing a key in a header of an IP packet to the ranges from the first selection stage of respective rules that have non-overlapping ranges. Rules of the second selection stage are used to determine whether or not to forward a packet. An advantage of the method in Calvignac is to more quickly select which rules shall be applied to a given IP packet prior to actual execution or performance of the rules on the key of the IP packet. Thus, Calvignac solves a different problem than that of the claimed invention. For example, in comparison, the claimed invention enables execution of rules at run-time to prevent other rules from being performed. Calvignac does not provide such capability and therefore does not anticipate the claimed invention.

Again, Applicant points out that a thrust of the Examiner's argument relies on column 8, lines 24-47 of Calvignac. This technique discusses selecting a subset of filter rules to be applied to a key. There is no discussion whatsoever about executing the rules and, more specifically, how execution of one rule effects execution of another rule in a selected set of rules.

Based on the above distinction, Applicant respectfully submits that the rejection of claim 1 under 35 U.S.C. § 102(e) is improper. If the rejection is to be maintained, Applicant requests that the Examiner point out with particularity where the cited prior art discloses a configuration including all of the claim limitations as recited by amended claim 1. Accordingly, allowance of claim 1 as well as corresponding remaining dependent claims 6, 9, 12-14 is respectfully requested.

Claims 6, 9, and 12-14 depend from claim 1 further include distinctions not found in the cited references and therefore should also be allowable in view of the cited references.

Claim 19 includes similar limitations as claim 1 and also should be in allowable form as well as claims 24, 27, and 30-32.

Patentability of Claim 45

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 45. Applicants respectfully traverse the rejection because claim 1 includes limitations not found in any of the cited references.

As discussed above for claim 1, claim 45 recites selecting rules and, thereafter, executing (e.g., performing) rules to produce an access control decision. Thus claim 45 is distinct over Calvignac for similar reasons as discussed for claim 1. That is, as discussed above, Calvignac is limited to disclosing a method of selecting rules prior to "execution" of the rules.

Note that claim 45 includes further distinctions as well. For example, claim 45 recites "selecting at least two rules for performance to determine an access control decision, the at least two rules including a first rule and a second rule; performing a rule operation in the first rule of the at least two rules, the rule operation including a disregard instruction that, when performed, causes non-performance of at least one rule operation in the second rule that is disregarded based on the disregard instruction; and performing at least one rule operation in the second rule other than the at least one rule operation in the second rule that is disregarded."

None of the cited references discloses performing a disregard instruction in a first selected rule, performance of the disregard instruction causing non-performance of a rule operation in a second rule operation, while at least one rule operation in the second rule is still performed. In other words, the second rule operation includes some non-performed rule operations (e.g., disregarded rule operations based on execution of a disregard instruction in a first rule) and some performed rule operations. There is no indication in Calvignac that only a portion of a given rule (rather than all of a given rule) is ever performed as in the present invention. Calvignac especially does not show performing a disregard instruction in one rule, which results in performance of some rule operations and non-performance of other rule operations in another rule. In fact, Calvignac does not disclose that a given rule includes multiple rule operations at all as in claim 45. The Examiner assumes that a rule in Calvignac includes multiple rule operations, but the reference does not disclose this. Claim 45 recites that at least one rule operation (e.g., in the second rule) is disregarded and one rule operation is performed in the second rule.

Based on the above distinctions, Applicant respectfully submits that the rejection of claim 45 under 35 U.S.C. § 102(e) is improper. If the rejection is to be maintained, Applicant requests that the Examiner point out with particularity where the cited prior art discloses a configuration including all of the claim limitations as recited by amended claim 45. Accordingly, Applicant requests allowance of claim 45.

Patentability of Claim 52 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 52. Applicants respectfully traverse the rejection because claim 52 includes limitations not found in any of the cited references.

As discussed above for claim 1, claim 52 recites that the first rule includes “a disregard instruction that, when executed, limits performance to fewer than all rule operations in a second rule of the selected set of rules as specified by disregard criteria in the disregard instruction.” There is no mention whatsoever in Calvignac that a first executed rule in a selected set of rules limits performance of rule operations in a second rule in selected set of rules. Calvignac only performs a two-stage selection process to determine what rules apply to a given IP packet. Thus, claim 52 is distinct over Calvignac and is in condition for allowance.

Claims 53, 55, 56 and 57 depend from claim 52 and include further distinctions not found in the cited references and therefore should also be allowable.

Patentability of Claim 58 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 58. Applicants respectfully traverse the rejection because claim 52 includes limitations not found in any of the cited references as discussed above for claim 1 as well as other claims. Claims 59-62 depend from claim 58 and include further distinctions not found in the cited references and therefore should also be allowable.

Applicant submits that claim 60 further includes distinctions over Calvignac. For example, claim 60 recites “wherein a field of data in the conditional disregard rule operation specifically identifies a first type of rule operations that are to be disregarded from execution in the set of rules, execution of the conditional disregard rule operation not having any affect on whether to perform a second type of rule operations in the set of rules.” The Examiner cites column 8, lines 24-47 for these limitations. Applicant submits that Calvignac does not disclose a disregard rule operation identifying a type of rule operation in a selected set of rules to be disregarded. Instead, Calvignac discloses sweeping

through ranges to select which filter rules shall be included in a subset of filters potentially applied to a key. The teachings in Calvignac, therefore, are not equivalent to limitations in claim 60. The rejection of claim 60 should be withdrawn.

Claim 62 recites “during processing of the set of rules, performing an unconditional disregard rule operation in the set of rules that results in termination of performing any other rule operations in the selected set of rules.” Applicant disagrees with the Examiner’s assessment of column 2, lines 40-45. This passage recites matching a key of a packet to criteria for a filter rule. That is, if there is match, then a filter rule is applied. If not, a filter rule is not applied. As discussed in Calvignac, this process is repeated to determine whether other filter rules apply to a key. There is no indication that the process of checking stops, even for all other selected rules in a subset. Column 5 lines 28-35 only indicates that ranges or exact matches can be used in the check process whether a rule applies to a key. Again, there is no indication that the process of checking stops for all other selected rules in a subset when there is no match. The rejection of claim 62 therefore should be withdrawn.

Patentability of Claim 63 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 63. Applicants respectfully traverse the rejection because claim 63 includes limitations not found in any of the cited references as discussed above for claim 1 as well as other claims. Claims 64-69 depend from claim 63 and include further distinctions not found in the cited references and therefore should also be allowable.

Claim 65 recites “after disregarding execution of at least one rule operation in the second set of rules as identified by the disregard rule operation in the first set of rules, performing at least one rule operation in the second set of

rules not associated with the disregard rule operation.” This claim is allowable for the same reasons claim 45 is allowable.

Claim 67 recites “wherein the disregard rule operation is a conditional disregard rule operation, a field of data in the conditional disregard rule operation specifically identifying a first type of rule operations that are to be disregarded from execution in the first set of rules and the second set of rules, execution of the conditional disregard rule not having any affect on whether to perform a second type of rule operation in the second set of rules.” This claim is allowable for the same reasons claim 60 is allowable.

Patentability of Claim 70 and Corresponding Dependent Claims

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 70. Applicants respectfully traverse the rejection because claim 70 includes limitations not found in any of the cited references as discussed above for claim 1 as well as other claims. Claims 71-75 depend from claim 70 and include further distinctions not found in the cited references and therefore should also be allowable.

Claim 70 recites “during execution of rule operations of that rule, executing a first conditional disregard instruction that establishes a first set of pre-conditions that must be met in successive rules in the master rule set in order for those successive rules to be executed after the rule containing the first conditional disregard instruction has been executed; and executing at least one successive rule in the master rule set for which the access request meets the filters of those successive rules, and for which the first set of pre-conditions established by executing the first conditional disregard instruction are also met.” As discussed, Calvignac does not discuss a process of executing rule operations, but instead addresses selecting rules to be applied to a key. There certainly is no recitation in Calvignac of establishing preconditions based on

execution of a rule, especially preconditions that must be met in order for successive rules to be executed after executing a conditional disregard instruction. The claimed technique affords a novel way of enabling one executed rule from eliminating other rules or rule operations from also being applied to an access request. There is no such teaching in Calvignac or any other cited reference. The rejection of claim 70 is improper and therefore should be withdrawn.

Claim 72 recites "wherein pre-conditions established by execution of the conditional disregard instructions indicate a type of data upon which rule operations of successive rules in the master rule set operate that are not to be executed during execution of the successive rules in the master rule set." The cited passages in Calvignac do not discuss a process of establishing preconditions, especially those that indicate a type of data upon which successive rules are not to be executed in a selected set of rules. The claimed technique affords a novel way of indicating which type of rules shall be eliminated during an execution process. There is no such teaching in Calvignac or any other cited reference. The rejection of claim 72 is improper and therefore should be withdrawn.

Patentability of Claim 76

The Office Action cites Calvignac (U.S. Patent 6,539,394) as the closest prior art to reject the invention as in claim 76. Applicants respectfully traverse the rejection because claim 63 includes limitations not found in any of the cited references as discussed above for claim 1 as well as other claims.

Patentability of New Claims 77-82

New claims 77-82 include further distinctions over the cited prior art. Applicant respectfully requests allowance of these claims as well as the pending

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claims above. Support for the claims can be found in figure 5 as well as related text in the specification.

CONCLUSION

In view of the foregoing remarks, Applicants submit that the pending claims as well as newly added claims are in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after reviewing this Response, that the pending claims are not in condition for allowance, the Examiner is respectfully requested to call the Applicant(s) Representative at the number below for an interview.

Applicants hereby petition for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully request(s)ed to contact the undersigned Attorney at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,



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